

1. An optical switch, comprising:
first and second optical arrays separated by an interface; and
a support structure upon which said optical arrays are mounted, said support structure including an area which has a flexing profile that differs from the remainder of said support structure, wherein the operation of force on said support structure serves to optically couple and de-couple said optical arrays.
2. The optical switch of claim 1, wherein said first optical array includes a first chip and a first optical fiber, and said second optical array includes a second chip and a second optical fiber, said first and second chips being mounted on said support structure.
3. The optical switch of claim 2, wherein each said chip includes a groove, said optical fibers being mounted within said grooves.
4. The optical switch of claim 1, wherein said support structure comprises a flex plate and said area comprises a trench.
5. The optical switch of claim 4, wherein said optical arrays are mounted on said flex plate such that said trench is positioned beneath said interface.

6. The optical switch of claim 4, wherein said trench has a smooth sidewall.
7. The optical switch of claim 4, further comprising:
one or more grooves located on said chips;
a plurality of grooves located on said flex plate, wherein said optical arrays are mounted on said flex plate such that said grooves on said chips mate with respective said grooves on said flex plate; and
a plurality of spheres positionable within said grooves on said chips and said flex plate.
8. The optical switch of claim 7, wherein one said groove on said chips is elongated relative to the other said grooves, said elongated groove allowing movement of one of said optical arrays relative to the other of said optical arrays prior to mounting of said optical arrays on said flex plate.
9. The optical switch of claim 4, wherein said flex plate includes an etch stop layer.
10. An optical switch, comprising:
first, second and third optical arrays, wherein said third optical array is interposed between said first and second optical arrays, said first and third optical arrays are separated by a first interface, and said second and third optical arrays

are separated by a second interface;

a support structure upon which said first, second and third optical arrays are mounted, said support structure including a pair of areas which each have a flexing profile that differs from the remainder of said support structure; and

fourth and fifth optical arrays, wherein said fourth optical array is positioned transverse to said first and third optical arrays in the vicinity of said first interface and said fifth optical array is positioned transverse to said second and third optical arrays in the vicinity of said second interface.

11. The optical switch of claim 10, wherein said optical arrays each include an optical fiber mounted on a chip.

12. The optical switch of claim 11, wherein each said chip has a groove, said optical fibers being mounted in said grooves.

13. The optical switch of claim 10, wherein said support structure comprises a flex plate and said areas each comprise a trench.

14. The optical switch of claim 13, wherein said flex plate includes an etch stop layer.

15. The optical switch of claim 13, wherein said first, second and third optical arrays are mounted on said flex plate such that one said trench is

positioned beneath said first interface and the other said trench is positioned beneath said second interface.

16. The optical switch of claim 15, wherein said optical arrays are capable of selective optical coupling with one another.

17. The optical switch of claim 16, wherein forces directed in certain directions and at certain locations of said flex plate optically couple said first, second and third optical arrays together.

18. The optical switch of claim 16, wherein forces directed in certain directions and at certain locations of said flex plate optically couple said first and fourth optical arrays together.

19. The optical switch of claim 16, wherein forces directed in certain directions and at certain locations of said flex plate optically couple said second and fifth optical arrays together.

20. A method for assembling an optical switch, comprising:
aligning at least a first optical array and a second optical array relative to one another with an alignment tool;
positioning said at least first and second optical arrays on a support structure;

immobilizing said at least first and second optical arrays relative to said

support structure; and

removing said tool from said at least first and second optical arrays.

21. The method of claim 20, wherein said aligning comprises:

mating at least a first groove on said tool with at least a first groove on said first optical array;

mating at least a second groove on said tool with at least a second groove on said second optical array; and

positioning a sphere within said mated first grooves and positioning a sphere within said mated second grooves.

22. The method of claim 20, wherein said positioning comprises locating on said support structure said at least first and second optical arrays with an interface therebetween.

23. The method of claim 22, wherein said locating is such that upon certain forces directed in certain directions and at certain locations of said support structure said interface is lessened and said at least first and second optical arrays are optically coupled.

24. The method of claim 20, wherein said immobilizing comprises adhering said at least first and second optical arrays to said support structure.

25. The method of claim 20, wherein said aligning comprises aligning said first and second optical arrays relative to a third optical array, said third optical array being interposed between said first and second optical arrays.

26. The method of claim 25, wherein said positioning comprises locating on said support structure said first, second and third optical arrays with a first interface between said first and third optical arrays and a second interface between said second and third optical arrays.

27. The method of claim 26, wherein said locating is such that upon certain forces directed in certain directions and at certain locations of said support structure, said first and second interfaces are lessened and said at least first and second optical arrays are optically coupled with said third optical array.

28. The method of claim 25, wherein said immobilizing comprises adhering said first, second and third optical arrays to said support structure.

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